

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Previously Presented) An electrokinetic method for at least one of groundwater protection, soil remediation or soil engineering which comprises applying an electric field between iron-rich sacrificial electrodes, which are implanted in an area of water-bearing soil, sediment or slurry so as to generate an abrupt pH and Eh gradient from acid to alkaline conditions, with the spontaneous *in situ* precipitation of a stable iron-rich band occurring at the boundary between the acid and alkaline zones, wherein no conditioning solutions are added to the soil during performance of the method.
2. (Previously Presented) A method as claimed in claim 1, wherein the pH gradient is from pH 2 to pH 13.
3. (Previously Presented) A method as claimed in claim 1, wherein the step of applying an electric field comprises applying a current between one or more pairs of electrodes inserted in the area of soil, sediment or slurry.
4. (Original) A method as claimed in claim 3, wherein the electrodes are made of cast iron, scrap iron, stainless steel or other iron-rich material.
5. (Previously Presented) A method as claimed in claim 3, wherein the step of applying an electric field comprises applying a voltage less than 0.5 volts per cm of the distance between a pair of electrodes.

6. (Previously Presented) A method as claimed in claim 1, wherein the soil, sediment or slurry contains at least one of organic, inorganic or radioactive contaminants.
7. (Previously Presented) A method as claimed in claim 1, wherein the iron-rich band acts as at least one of a physical or chemical barrier to contaminants present in the soil, sediment or slurry.
8. (Previously Presented) A method as claimed in claim 1, where iron is precipitated to form an impermeable coherent band, or a coating which cements at least one of soil or sediment particles, or a dispersed coating on mineral grains, between two or more electrodes.
9. (Previously Presented) A method as claimed in claim 1, wherein the generation of the pH/Eh gradient performs at least one of mobilizing, remobilizing, or trapping contaminants present in the soil, sediment or slurry.
10. (Previously Presented) A method as claimed in claim 1, which is performed for the purpose of at least one of the stabilization or strategic dewatering, or rewatering of at least one of soils, sediment or slurries, the improvement of the physical properties of soils and sediments for engineering purposes, and at least one of the forced and directed migration of contaminated leachates or electro-osmotic purging of non-polar contaminants.

11. (Previously Presented) A method as claimed in claim 2, wherein the step of applying an electric field comprises applying a current between one or more pairs of electrodes inserted in the area of soil, sediment or slurry.
12. (Previously Presented) A method as claimed in claim 4, wherein the step of applying an electric field comprises applying a voltage less than 0.5 volts per cm of the distance between a pair of electrodes.
13. (Previously Presented) A method as claimed in claim 2, wherein the soil, sediment or slurry contains at least one of organic, inorganic or radioactive contaminants.
14. (Previously Presented) A method as claimed in claim 3, wherein the soil, sediment or slurry contains at least one of organic, inorganic or radioactive contaminants.
15. (Previously Presented) A method as claimed in claim 4, wherein the soil, sediment or slurry contains at least one of organic, inorganic or radioactive contaminants.
16. (Previously Presented) A method as claimed in claim 2, which is performed for the purpose of at least one of the stabilisation or strategic dewatering, or rewatering of at least one of soils, sediment or slurries, the improvement of the physical properties of soils and sediments for engineering purposes, and at least one of the forced and directed migration of contaminated leachates or electro-osmotic purging of non-polar contaminants.

17. (Previously Presented) A method as claimed in claim 3, which is performed for the purpose of at least one of the stabilisation or strategic dewatering, or rewatering of at least one of soils, sediment or slurries, the improvement of the physical properties of soils and sediments for engineering purposes, and at least one of the forced and directed migration of contaminated leachates or electro-osmotic purging of non-polar contaminants.

18. (Previously Presented) A method as claimed in claim 4, which is performed for the purpose of at least one of the stabilisation or strategic dewatering, or rewatering of at least one of soils, sediment or slurries, the improvement of the physical properties of soils and sediments for engineering purposes, and at least one of the forced and directed migration of contaminated leachates or electro-osmotic purging of non-polar contaminants.

19. (Previously Presented) A method as claimed in claim 5, which is performed for the purpose of at least one of the stabilisation or strategic dewatering, or rewatering of at least one of soils, sediment or slurries, the improvement of the physical properties of soils and sediments for engineering purposes, and at least one of the forced and directed migration of contaminated leachates or electro-osmotic purging of non-polar contaminants.

20. (Previously Presented) A method as claimed in claim 6, which is performed for the purpose of at least one of the stabilisation or strategic dewatering, or rewatering of at least one of soils, sediment or slurries, the improvement of the physical properties of soils and sediments for engineering purposes, and at least one

of the forced and directed migration of contaminated leachates or electro-osmotic purging of non-polar contaminants.

21. (Previously Presented) An electrokinetic method for at least one of groundwater protection, soil remediation or soil engineering which comprises:

(a) applying an electric field between iron-rich sacrificial electrodes, which are implanted in an area of water-bearing soil, sediment or slurry so as to generate an abrupt pH and Eh gradient from acid to alkaline conditions; and

(b) precipitating at least one of zero valent iron or an iron oxide to form a stable iron band occurring at the boundary between the acid and alkaline zones.

22. (Previously Presented) A method as claimed in claim 20, wherein the pH gradient is from pH 2 to pH 13.

23. (Previously Presented) A method as claimed in claim 20, wherein the electrodes are made of a material selected from the group consisting of cast iron, scrap iron, and stainless steel.

24. (Previously Presented) A method as claimed in claim 20, wherein the step of applying an electric field comprises applying a voltage less than 0.5 volts per cm of the distance between electrodes.

25. (Previously Presented) A method as claimed in claim 20, wherein the generation of the pH/Eh gradient performs at least one of mobilizing, remobilizing, or trapping contaminants present in the soil, sediment or slurry.

26. (New) A method for at least one of groundwater protection, soil remediation, or soil engineering, comprising:
- providing at least one pair of iron-rich sacrificial electrodes including an anode and a cathode;
 - implanting the electrodes in an area of water-bearing soil, sediment, or slurry;
 - generating an abrupt pH and Eh gradient from an acid zone proximate to the anode to an alkaline zone proximate to the cathode; and
 - precipitating a stable iron-rich band at a boundary between the acid zone and the alkaline zone to form a barrier to contaminants in the soil, sediment, or slurry.
27. (New) The method of claim 26, further comprising excavating the iron-rich band.